

Title: COMPOSITIONS AND METHODS FOR THE TREATMENT AND DIAGNOSIS OF BREAST CANCER  
Inventor(s): Tony N. Frudakis et al. Serial No. 09/534,825 Docket No. 210121.419C7



*Fig. 1*

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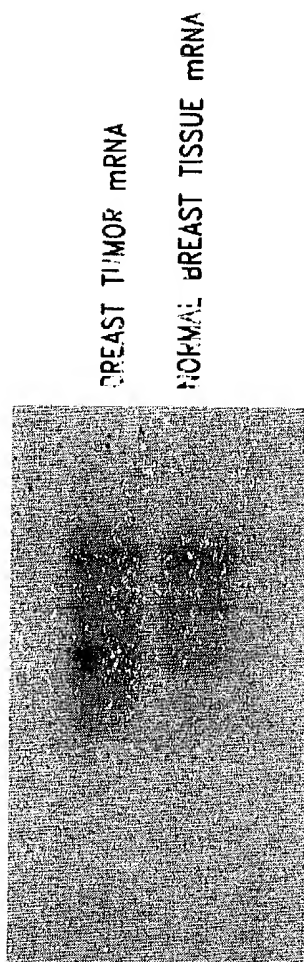
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*Fig. 2*



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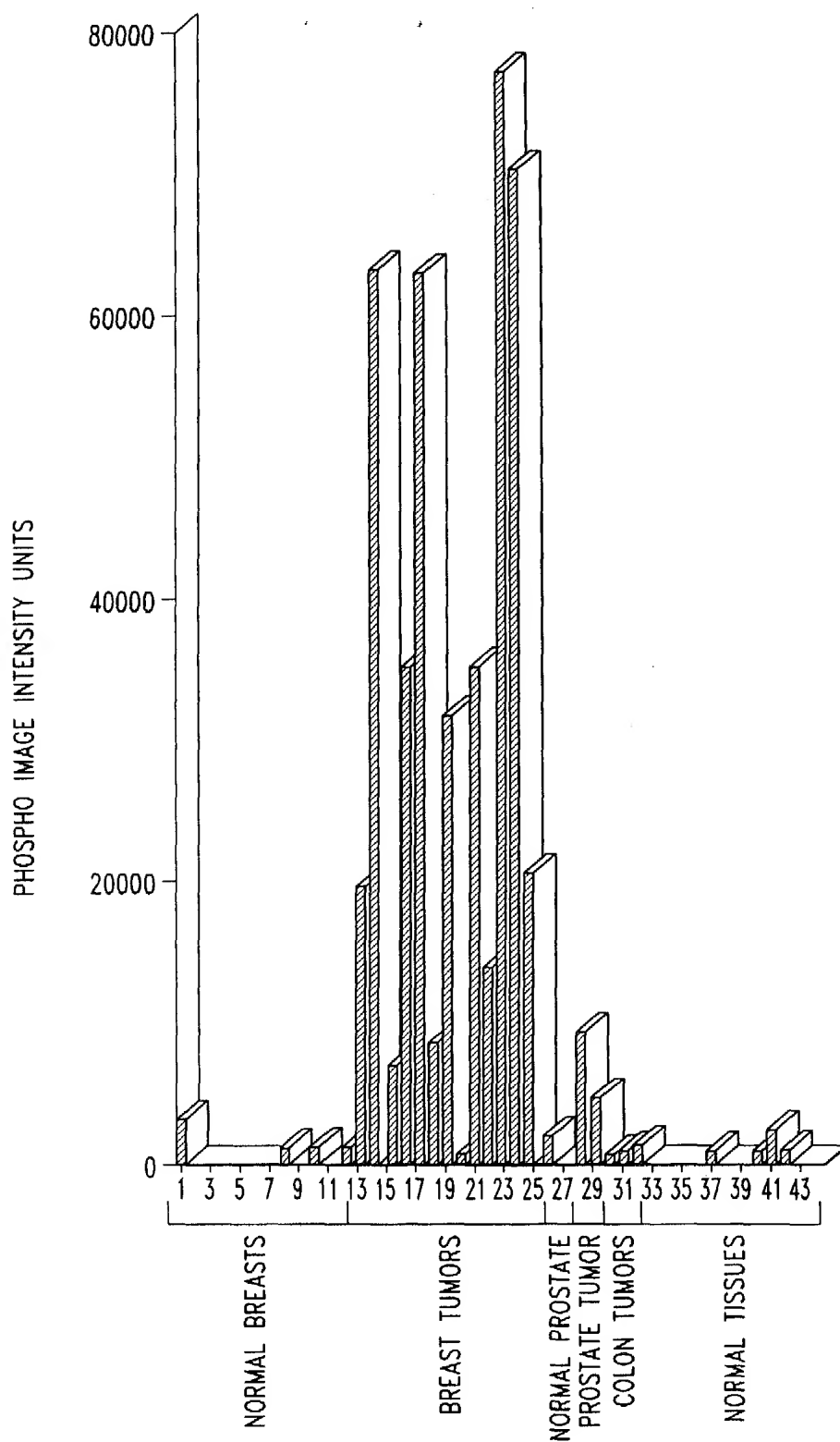


Fig. 3



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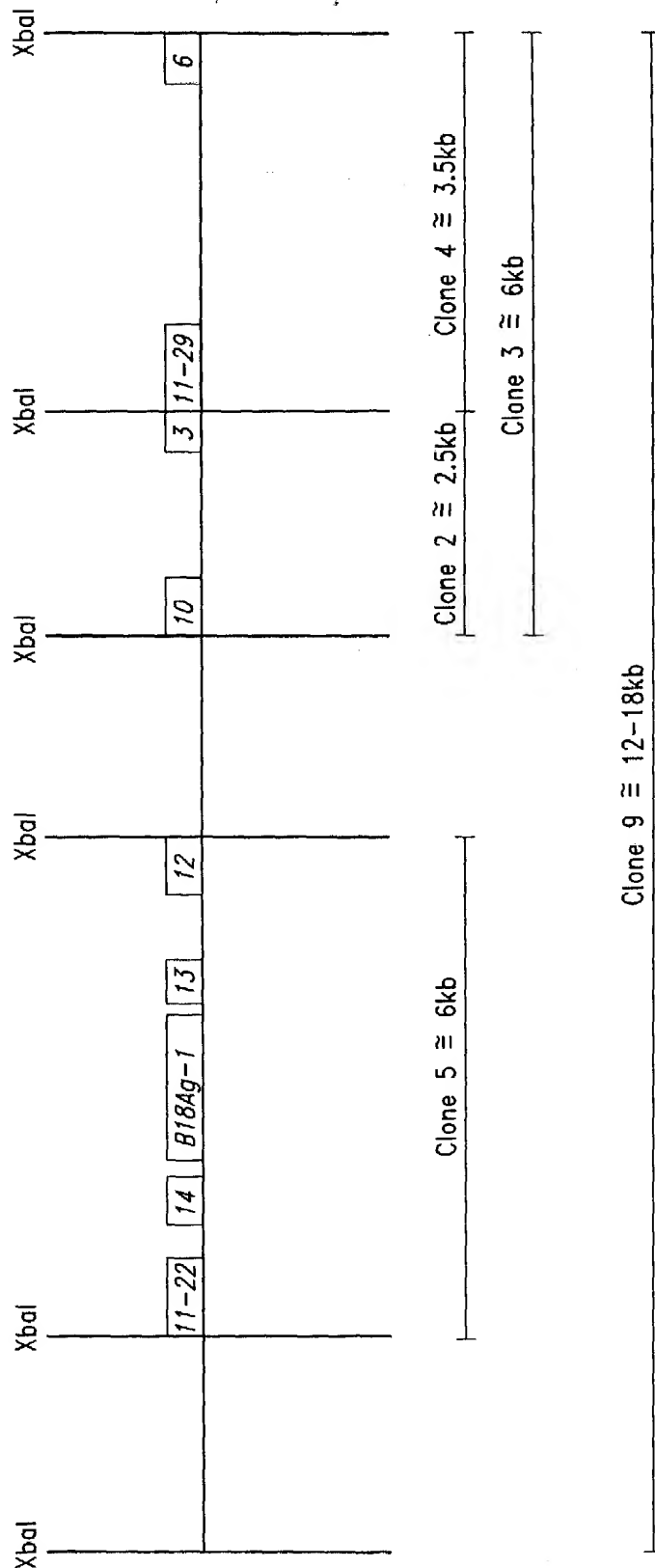
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GENOMIC CLONE MAP



*Fig. 4*



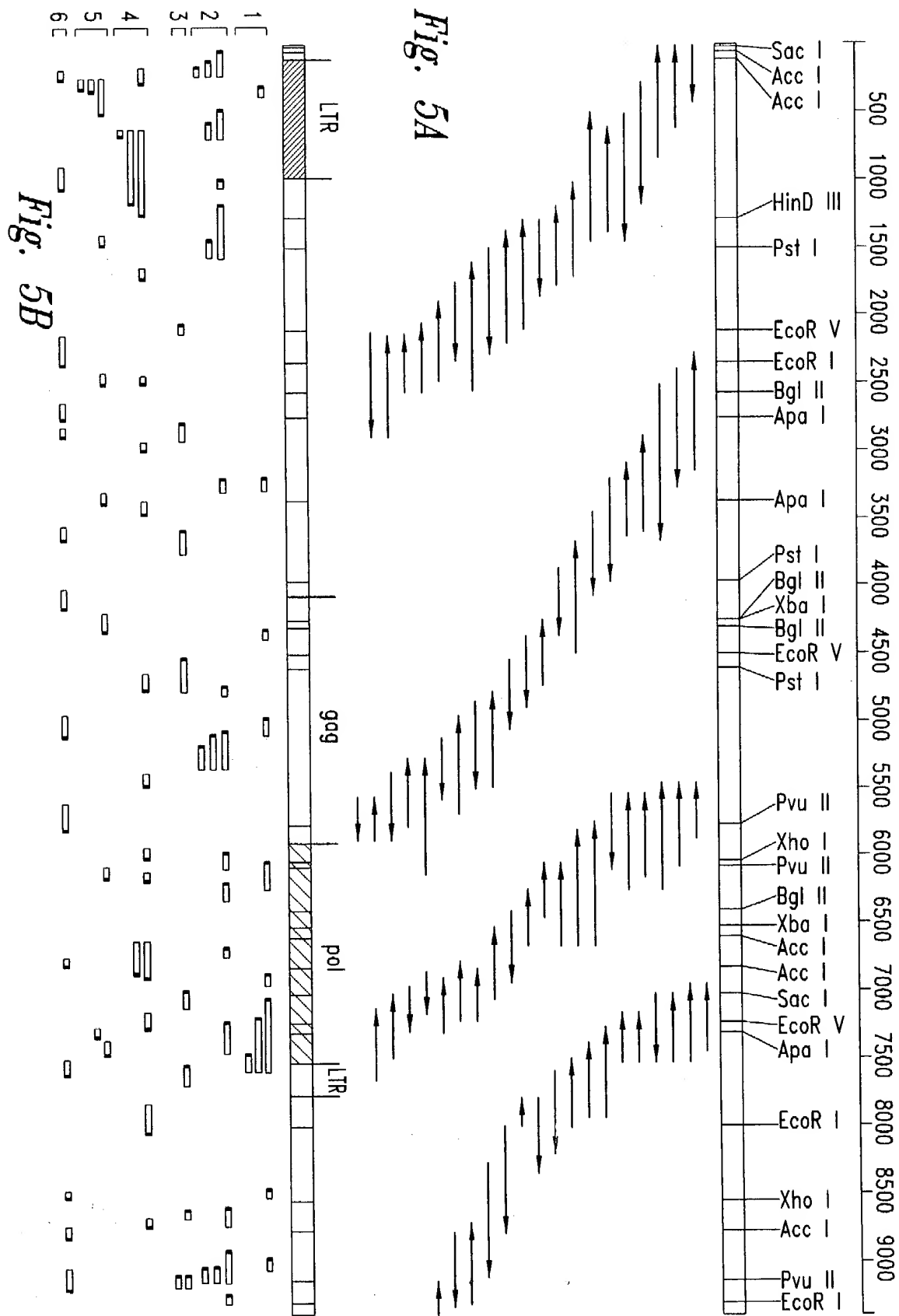
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NUCLEOTIDE SEQUENCE OF THE REPRESENTATIVE  
 BREAST-TUMOR SPECIFIC cDNA B18Ag1

TTA GAG ACC CAA TTG GGA CCT AAT TGG GAC CCA AAT TTC TCA AGT GGA	48
Leu Glu Thr Gln Leu Gly Pro Asn Trp Asp Pro Asn Phe Ser Ser Gly	
1 5 10 15	
GGG AGA ACT TTT GAC GAT TTC CAC CGG TAT CTC CTC GTG GGT ATT CAG	96
Gly Arg Thr Phe Asp Asp Phe His Arg Tyr Leu Leu Val Gly Ile Gln	
20 25 30	
GGA GCT GCC CAG AAA CCT ATA AAC TTG TCT AAG GCG ATT GAA GTC GTC	144
Gly Ala Ala Gln Lys Pro Ile Asn Leu Ser Lys Ala Ile Glu Val Val	
35 40 45	
CAG GGG CAT GAT GAG TCA CCA GGA GTG TTT TTA GAG CAC CTC CAG GAG	192
Gln Gly His Asp Glu Ser Pro Gly Val Phe Leu Glu His Leu Gln Glu	
50 55 60	
GCT TAT CGG ATT TAC ACC CCT TTT GAC CTG GCA GCC CCC GAA AAT AGC	240
Ala Tyr Arg Ile Tyr Thr Pro Phe Asp Leu Ala Ala Pro Glu Asn Ser	
65 70 75 80	
CAT GCT CTT AAT TTG GCA TTT GTG GCT CAG GCA GCC CCA GAT AGT AAA	288
His Ala Leu Asn Leu Ala Phe Val Ala Gln Ala Ala Pro Asp Ser Lys	
85 90 95	
AGG AAA CTC CAA AAA CTA GAG GGA TTT TGC TGG AAT GAA TAC CAG TCA	336
Arg Lys Leu Gln Lys Leu Glu Gly Phe Cys Trp Asn Glu Tyr Gln Ser	
100 105 110	
GCT TTT AGA GAT AGC CTA AAA GGT TTT	363
Ala Phe Arg Asp Ser Leu Lys Gly Phe	
115 120	

*Fig. 6*

NUCLEOTIDE SEQUENCE OF THE REPRESENTATIVE  
 BREAST-TUMOR SPECIFIC cDNA B17Ag1

GC TGGGCACAGT GGCTCATACC TGTAATCCTG ACCGTTTCAG AGGCTCAGGT	60
CG CTTGAGCCCA AGATTTCAG ACTAGTCTGG GTAACATAGT GAGACCCTAT	120
AA AAATAAAAAA ATGAGCCTGG TGTAGTGGCA CACACCAGCT GAGGAGGGAG	180
CT AGGAGA	196

*Fig. 7*

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BREAST-TUMOR SPECIFIC cDNA B17Ag2

GC TTGGGGGCTC TGACTAGAAA TTCAAGGAAC CTGGGATTCA AGTCCAAC TG 60  
AC TTCACTGTG GNETCCAATA AACTGCTTCT TTCCTATTCC CTCTCTATTA 120  
AA GGAAAACGAT GTCTGTGTAT AGCCAAGTCA GNTATCCTAA AAGGAGATAC 180  
AT TAAATATCAG AATGTAAAAC CTGGGAACCA GGTTCCTCAG CTGGGATTAA 240  
CA AGAAGACTGA ACAGTACTAC TGTGAAAAGC CCGAAGNGGC AATATGTTCA 300  
TT GAAGGATGGC TGGGAGAATG AATGCTCTGT CCCCAGTCC CAAGCTCACT 360  
CT CCTTTATAGC CTAGGAGA 388

*Fig. 8*

NUCLEOTIDE SEQUENCE OF THE REPRESENTATIVE  
BREAST-TUMOR SPECIFIC cDNA B13Ag2a

GC CTATAATCAT GTTTCCTATT ATTTTCACAT TTTATTAACC AATTCTGTT 60  
AA AATATGAGGG AAATATATGA AACAGGGAGG CAATGTTTCA ATAATTGATC 120  
TG ATTTCTACAT CAGATGCTCT TTCCTTCTCT GTTTATTTC TTTTATTTC 180  
GG TCGAATGTAA TAGCTTTGTT TCAAGAGAGA GTTTTGGCAG TTTCTGTAGC 240  
CT GCTCATGTCT CCAGGCATCT ATTTGCACTT TAGGAGGTGT CGTGGGAGAC 300  
CT ATTTTTTCCA TATTTGGGCA ACTACTA 337

*Fig. 9*

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BREAST-TUMOR SPECIFIC cDNA B13Ag1b

GC CATACAGTGC CTTTCCATTT ATTTAACCCC CACCTGAACG GCATAAACTG 60  
GC TGGTGTTTTT TACTGTAAAC AATAAGGAGA CTTTGCTCTT CATTAAACC 120  
AT TTCATATTTT ACGCTCGAGG GTTTTTACCG GTTCCTTTTT AACTCCTTA 180  
TT TAAGTCGTTT GGAACAAGAT ATTTTTCTT TCCTGGCAGC TTTAACATT 240  
TT TGTGCTGGG GGACTGCTGG TCACTGTTT TCACAGTTGC AAATCAAGGC 300  
CC AAGAAAAAAA AATTTTTTTG TTTTATTGA AACTGGACCG GATAAACGGT 360  
CG GCTGCTGTAT ATAGTTTAA ATGGTTTATT GCACCTCCTT AAGTTGCACT 420  
GG GGGGNTTTTG NATAGAAAGT NTTTANTCAC ANAGTCACAG GGACTTTTNT 480  
NA CTGAGCTAAA AAGGGCTGNT TTTCGGGTGG GGGCAGATGA AGGCTCACAG 540  
TC TCTTAGAGGG GGGAACTNCT A 571

*Fig. 10*



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BREAST-TUMOR SPECIFIC cDNA B13Ag1a

TA ATAACCTAAA TATATTTTGA TCACCCACTG GGGTGATAAG ACAATAGATA 60  
TT TCCAAAAAGC ATAAACCAA AGTATCATAC CAAACCAAAT TCATACTGCT 120  
CC GCACTGAAAC TTCACCTTCT AACTGTCTAC CTAACCAAAT TCTACCCTTC 180  
GG TGGGTGCTCA CTA CTCTTTT TTTTTTTTTT TTTNTTTTGG AGATGGAGTC 240  
CA GCCCAGGGGT GGAGTACAAT GGCACAACCT CAGCTCACTG NAACCTCCGC 300  
TT CATGAGATTC TCCTGNTTCA GCCTTCCCAG TAGCTGGGAC TACAGGTGTG 360  
TG CCTGGNTAAT CTTTTTTNGT TTTNNGGTAG AGATGGGGGT TTTACATGTT 420  
TG GTNTCGAACT CCTGACCTCA AGTGATCCAC CCACCTCAGG CTCCTCAAAGT 480  
TA CAGACATGAG CCACTGNGCC CAGNCCTGGT GCATGCTCAC TTCTCTAGGC 540

*Fig. 11*



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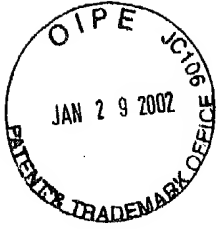
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BREAST-TUMOR SPECIFIC cDNA B11Ag1

TG CACATGCAGA ATATTCTATC GGTACTTCAG CTATTACTCA TTTTGATGGC 60  
AG CCTATCCTCA AGATGAGTAT TTAGAAAGAA TTGATTTAGC GATAGACCAA 120  
GC ACTCTGACTA CACGAAATTG TTCAGATGTG ATGGATTAT GACAGTTGAT 180  
GA GATTATTAAG TGATTATTTT AAAGGGAATC CATTAATTCC AGAATATCTT 240  
TC AAGATGATAT AGAAATAGAA CAGAAAGAGA CTACAAATGA AGATGTATCA 300  
TA TTGAAGAGCC TATAGTAGAA AATGAATTAG CTGCATTAT TAGCCTTACA 360  
TT TTCCTGATGA ATCTTATATT CAGCCATCGA CATAGCATT CCTGATGGGC 420  
GA ATAATAGAAA CTGGGTGCGG GGCTATTGAT GAATTCATCC NCAGTAAATT 480  
AC AAAATATAAC TCGATTGCAT TTGGATGATG GAATACTAAA TCTGGCAAAA 540  
GG AGCTACTAGT AACCTCTCTT TTTGAGATGC AAAATTTTCT TTTAGGGTTT 600  
CT ACTTTACGGA TATTGGAGCA TAACGGGA 638

*Fig. 12*



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BREAST-TUMOR SPECIFIC cDNA B3CA3c

ACTGATGGAT GTCGCCGGAG GCGAGGGGCC TTATCTGATG CTCGGCTGCC TGTCGTGAT 60  
GTGCGCGGCG ATTGGGCTGT TTATCTCAAA CACCGCCACG GCGGTGCTGA TGGCGCCTAT 120  
TGCCTTAGCG GCGGCGAAGT CAATGGGCGT CTCACCCTAT CCTTTTGCCA TGGTGGTGGC 180  
GATGGCGGCT TCGGCGGCGT TTATGACCCC GGTCTCCTCG CCGGTTAACA CCCTGGTGCT 240  
TGGCCCTGGC AAGTACTCAT TTAGCGATTT TGTCAAAATA GGCCTG 286

*Fig. 13*

NUCLEOTIDE SEQUENCE OF THE REPRESENTATIVE  
BREAST-TUMOR SPECIFIC cDNA B9CG1

AG CAGCCCCCTC TTCTCAATTT CATCTGTAC TACCCTGGTG TAGTATCTCA 60  
CA TTTTATAGC CTCCTCCCTG GTCTGTCTTT TGATTTTCCT GCCTGTAATC 120  
AC ATAAGTCAA GTAAACATTT CTAAAGTGTG GTTATGCTCA TGCACTCCT 180  
AA ATAGTTTCCA TTACCGTCTT AATAAAATTC GGATTTGTTC TTTNCTATTN 240  
CA CCTATGACCG AA 262

*Fig. 14*

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NUCLEOTIDE SEQUENCE OF THE REPRESENTATIVE  
BREAST-TUMOR SPECIFIC cDNA B9CG3

AG CAAAGCCAGT GGTTTGAGCT CTCTACTGTG TAAACTCCTA AACCAAGGCC 60  
TA AATGGTGCCA GGATTTTAT TATAACATG TACCCATGCA AATTTCCTAT 120  
GA TATATTCTTC TACATTTAAA CAATAAAAAT AATCTATTTT TAAAAGCCTA 180  
AG TTAGGTAAGA GTGTTTAATG AGAGGGTATA AGGTATAAAT CACCAGTCAA 240  
TG CCTATGACCG A 261

*Fig. 15*

NUCLEOTIDE SEQUENCE OF THE REPRESENTATIVE  
BREAST-TUMOR SPECIFIC cDNA B2CA2

CGACGTCGGT AAAATCGGAC ATGAAGCCAC CGCTGGTCTT TTCGTCCGAG CGATAGGCGC 60  
CGGCCAGCCA GCGGAACGGT TGCCCGGATG GCGAAGCGAG CCGGAGTTCT TCGGACTGAG 120  
TATGAATCTT GTTGTGAAAA TACTCGCCGC CTCGTTCGA CGACGTCGCG TCGAAATCTT 180  
AATCATGGTT GAGCCGGATG CTGCCCCGA AGCCCT 276

*Fig. 16*



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NUCLEOTIDE SEQUENCE OF THE REPRESENTATIVE  
BREAST-TUMOR SPECIFIC cDNA B3CA1

```
CCCAGGTCAA CCAGGCTGCA ACACGCAGGT CCTTGGATTG GGCACGAAGC AGCGCTTCGC   60
TGTTTTCAG GATTTTCAAC CAGTCGGTCT GGCCGTTCTC ATGGAGCGAG AGCGCCTTGC   120
CCAGCTCATT TTCCAGCGCC TCGTATTCGC TGGAAAAACG CACATCTCA CCCGCAAAGA   180
CATCCTTTGA AATCGGCTGT TCCGCGAGTT CCAGATANTG CGAGGAGAGC TTGCTCGAAT   240
AGGTCATCCT AACCTTCAA TGCACACCAT GTGCGCCAAT GAATATCTTA ACAATTCAAC   300
TAGTTGGCAT AANAACCGAA CGAAAATCCC AATAGTCTGA AGAGCTCTTT TG           352
```

*Fig. 17*

NUCLEOTIDE SEQUENCE OF THE REPRESENTATIVE  
BREAST-TUMOR SPECIFIC cDNA B3CA2

```
CTGCATGTCC ACGGCCTGGA TTACGGGTG GTCGGCGTTC ACCCTGGCA GCTGGCGGCTC   60
TTCCCGACCA GGCCAGCAG GATGTGTGGG GCAAGGATAA CGGCGTGGC ATCGCCTCGA   120
CCTATATGCC TACTGGCAAG GCCGAGCCCG TGGAAAGCGG ATCAGGTTC ANCGGTCGCT   180
GGAGCTTTTC CACCGGCTCC ATGCATTGTG ACTGGCTGTT TCTAGGCGGT CTGTTGCCCA   240
AGCGTGATGG TACGTCTGGC CTGGAGCATG TGACTTCTG                             280
```

*Fig. 18*



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NUCLEOTIDE SEQUENCE OF THE REPRESENTATIVE  
BREAST-TUMOR SPECIFIC cDNA B3CA3

AG GGAGCAAGGA GAAGGCATGG AGAGGCTCAN GCTGGTCCTG GCCTACGACT 60  
CT GTCGCCGGGG ATGGTGGAGA ACTGAAGCGG GACCTCCTCG AGGTCCTCCG 120  
TC NCCGTCCAGG AGGAGGGTCT TTCCGTGGTC TNGGAGGAGC GGGGGGAGAA 180  
TC ATGGTENACA TCCC 204

*Fig. 19*

NUCLEOTIDE SEQUENCE OF THE REPRESENTATIVE  
BREAST-TUMOR SPECIFIC cDNA B4CA1

TC AGGAGCGGGT AGAGTGGCAC CATTGAGGGG ATATTCAAAA ATATTATTTT 60  
TG ATAGTTGCTG AGTTTTTCTT TGACCCATGA GTTATATTGG AGTTTATTTT 120  
CC AATCGCATGG ACATGTTAGA CTTATTTTCT GTTAATGATT NCTATTTTTA 180  
GA TTTGAGAAAT TGGTNTTAT TATATCAATT TTTGGTATTT GTTGAGTTTG 240  
GC TTAGTATGTG ACCA 264

*Fig. 20*

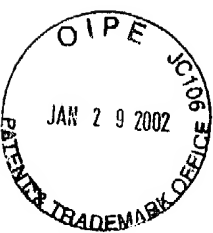
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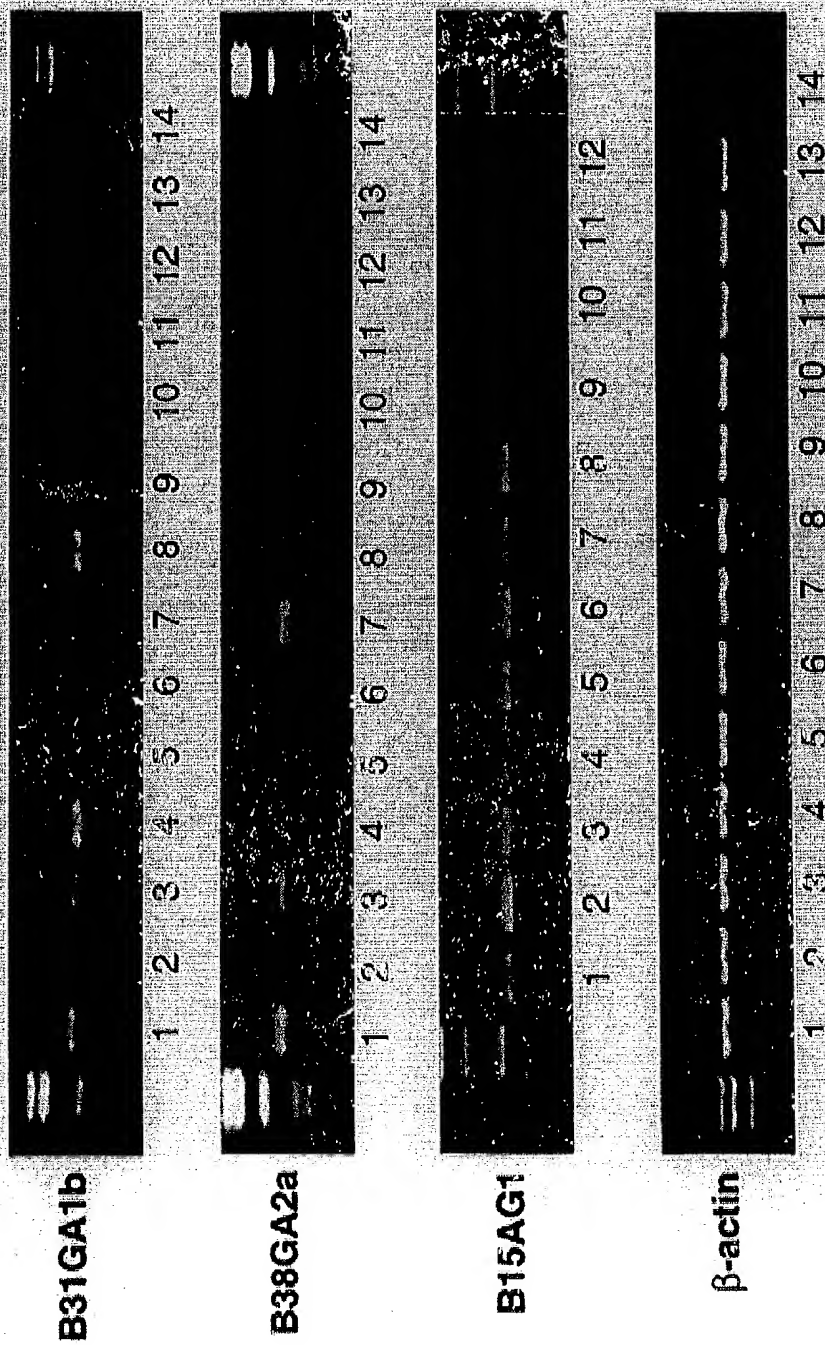


Fig. 21A



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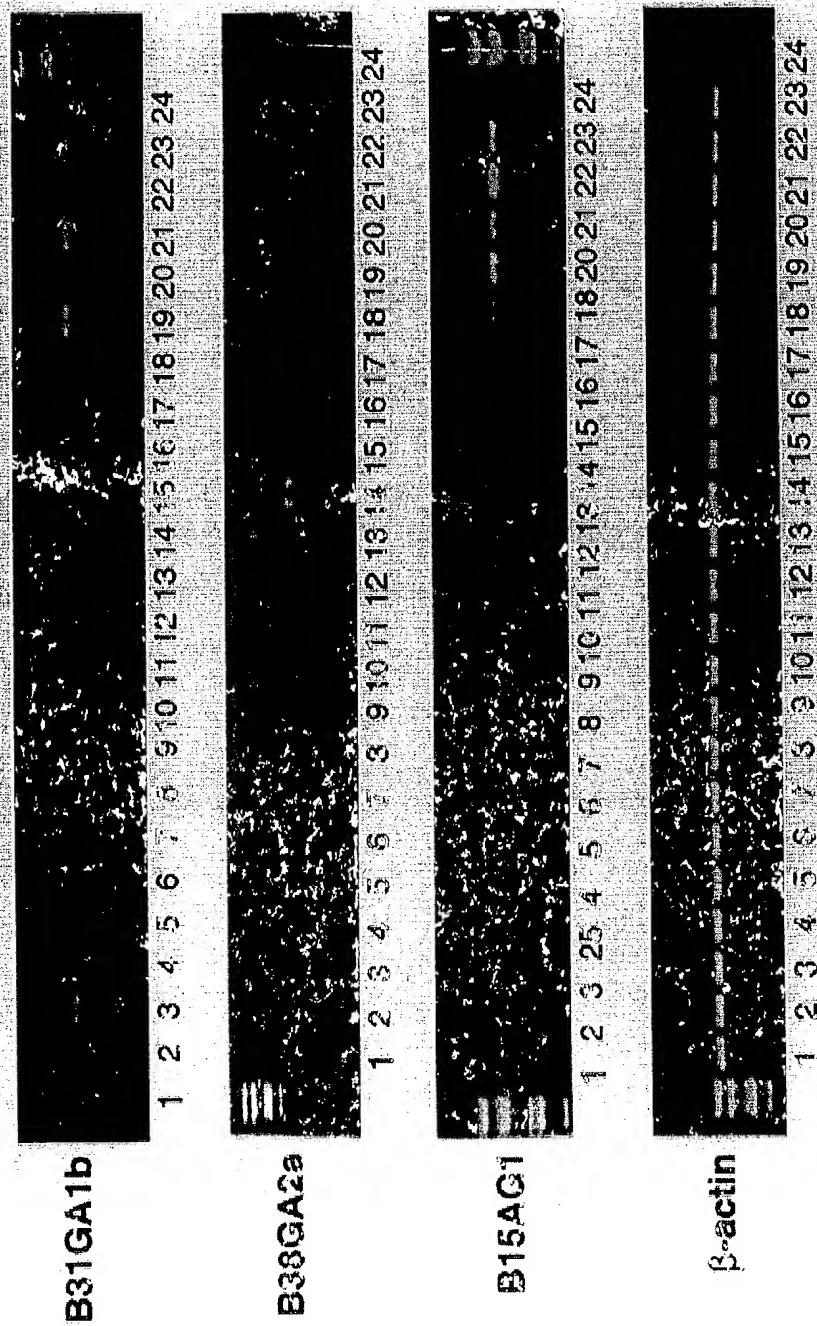
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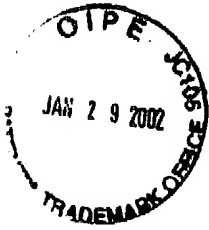
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*Fig. 2B*



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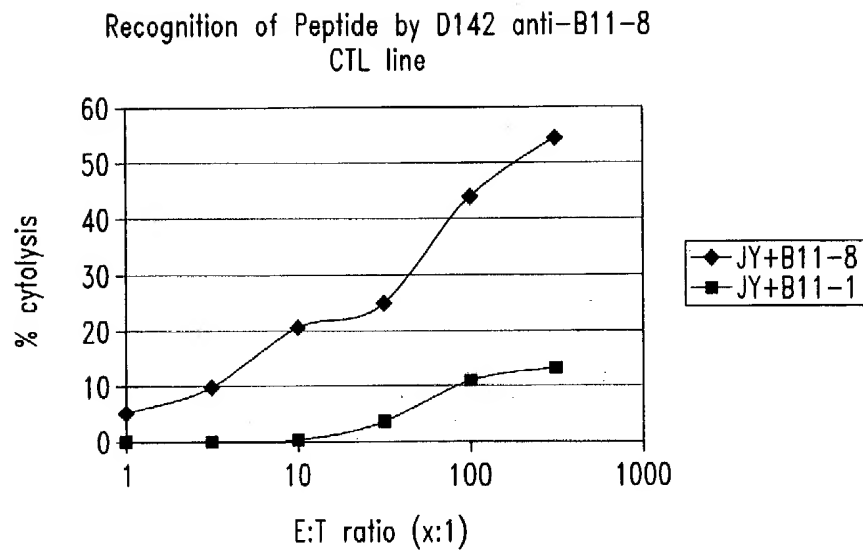
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*Fig. 22*

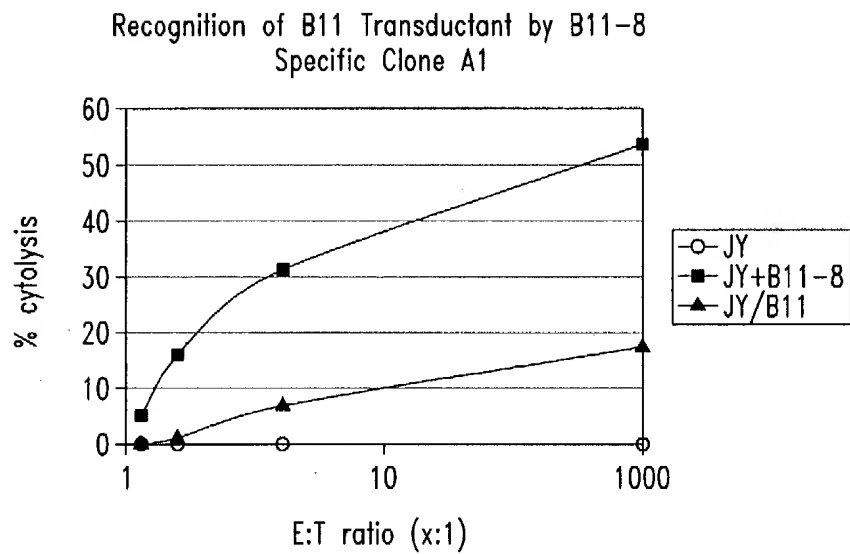
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*Fig. 23*



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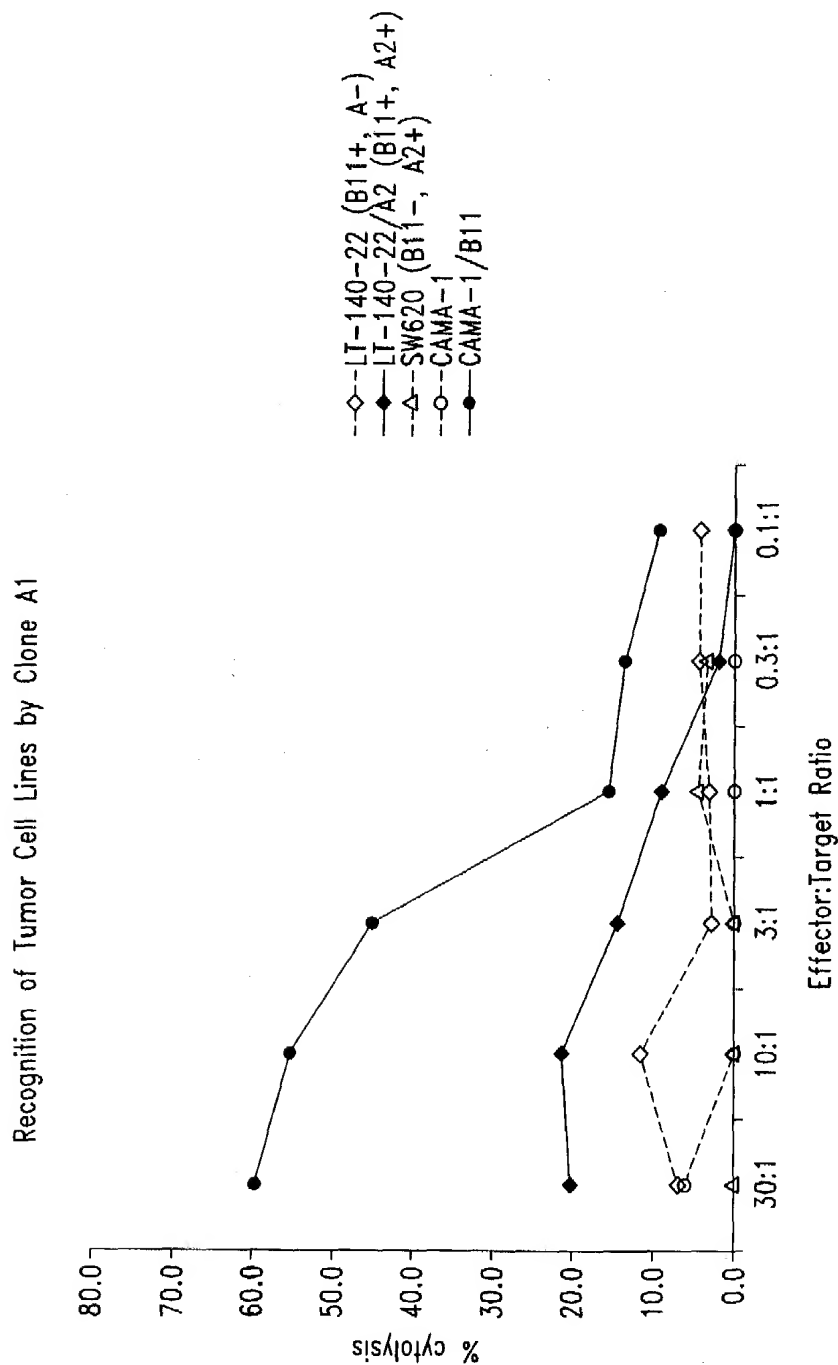


Fig. 24



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